

0- Reports, Quarterly Pishkun

QUARTERLY NARRATIVE REPORT

PISHKUN

August 1, 1940

To

October 31, 1940

Submitted By

Leon C. Snyder
Refuge Manager

1. WEATHER CONDITIONS

A. August

August of 1940 was one of the hottest and driest ever recorded in this section. Average maximum temperature for the month was 84.53 degrees, the average minimum being 46.80. On August 12, the thermometer reached 101 degrees. Precipitation for the month amounted to only .05 inches, this falling on the first day of the month. Twenty-five consecutive clear days were recorded.

B. September

Unlike August, September of 1940 lacked only a few hundredths of an inch of moisture for passing all previous records for this month. 2.90 inches was recorded by the County Extension Office Official in Choteau, and of this amount 1.54 inches fell during the period of September 21 and 22nd. Due to immediate preceeding rains, much of this moisture ran off uncultivated lands, and existing pot holes and ponds as well as many other hollows were filled with water. Average maximum and minimum temperatures for the month were 73.33 and 45.13 degrees respectively. No frosts were recorded and towards the end of the month grasses were again turning green.

C. October

Cloudy and windy weather predominated during October, with the first 4 days bringing a slow light drizzle of rain. The first killing frost for the season was on October 8 when the thermometer fell to 30 degrees above. On the 25th. of the month snow fell at Pishkun and other higher regions in this area, covering the ground to a depth of about 2 inches. A cold, strong wind accompanied this storm and one of the heaviest concentrations of waterfowl was noted during this period. Total precipitation for the month amounted to 1.17 inches, causing no run off. Average maximum and minimum temperatures were 60.79 and 36.07 degrees respectively.

11. WILDLIFE

A. Waterfowl

Concentrations and populations of waterfowl at Pishkun during this quarter as a whole, was much above that for this same quarter of 1939. This may be due to the fact that the water in Willow Creek Refuge, which is only about 6 miles distant air line, was very very low all through this quarter.

Populations for Willow Creek were very much below the recordings of this quarter for 1938 and 1939.

Although all species of ducks common to this area during migration, with exceptions of American Goldeneyes, have been on the refuge or passed through in large flocks, Geese, however, have not yet appeared in as great a number as they did a year ago. Small flocks of geese numbering up to about 100 have been on the refuge, the first being on October 1st. when 11 Snow Geese were observed. No large flights of Geese have been noted going south over Pishkun.

According to reports from hunters, many thousands of Snow Geese and also a large number of Canada Geese have been on and are still remaining on the St. Francis Lake west of Valier, Montana. About 5000 Snow Geese have also been noted on the Freezout Lake north-west of Fairfield during the later part of October.

The raft of Horned Grebes, Pied-Billed Grebes and Ruddy Ducks first observed on July 18, were still on the refuge on August 10th. This raft numbers approximately 2500 birds, a very large percent of which were juvenils. On this same date another raft of ducks estimated at about 3000 was observed. Accurate identification on this date was not possible because of the distance to the birds. Ducks closer to shore indicated that the raft might include Mallards, Pintails, Shovellers, Gadwalls and Teal. 30 Avocets were also noted along the shore.

August 11.-- Further investigations of the 3000 unidentified ducks of August 10, proved them to be chiefly Mallards. These are mostly all young ducks which I believe were hatched on the refuge and adjacent areas. This flock of ducks were on the refuge during all of August. During the day they were on the main lake at Pishkun and in the evening they would scatter over the smaller lakes throughout the Easements.

September--All species of waterfowl and shorebirds observed on the refuge during August were still there throughout September with exceptions of Avocets and Curlews. A decrease however was noted in the number of Mallards. Lesser Scaups and Buffle-heads were first noted on September 15th. American Coots started migrating into the refuge early in September there being about 1500 present on the 25th. Common Loon and Western Grebe were also numerous throughout the month.

October 1,-- The opening date for duck shooting was very good for many hunters hunting in adjacent areas to Pishkun. Canvasbacks, Redheads, and Ruddy Ducks were quite plentiful along with excellent shooting for Mallards, Pintails, Baldpates and Gadwalls. Reports from all duck hunters in the entire area around Choteau and Great Falls were that ducks were much more plentiful than in past years, and much praise was given the Fish And Wildlife Service.

October 5--Heavy shooting had been going on throughout the hunting season to-date, and while patrolling the adjacent areas to Pishkun on October 5th. and later dates it was noted that most all of the smaller lakes now have only a very small number of ducks on them and many have no ducks at all. The lakes in the refuge however showed an increase of ducks. While observing waterfowl movements in the early morning of October 5th., many ducks were noted flying into the refuge from adjacent ponds. A large increase in the number of northern birds was also noted on this date. These were chiefly Canvasbacks, Lesser Scaups, Mallards and American Coots. 9 Canada Geese and 2 Hooded Merganser were also noted.

October 6--Approximately 150 hunters were observed in areas adjacent to refuge. Only a very few ducks were killed however because most of the birds were within the refuge. 300 Redheads were observed on one small lake just within the refuge boundry.

October 7--About 6000 birds were noted scattered out along 1 mile of shore line on Pishkun proper. These were about 50% Coots, the balance being Canvasbacks, Redheads, Mallards, Gadwalls, Baldpates, Pintails, Lesser Scaups, Ruddy Ducks, American Mergansers, and a few Buffle-heads. 23 Canada Geese were also along the shore of a small island in Pishkun.

October 9--Fourteen thousand (14,000) birds were estimated in one raft on Pishkun proper. This raft contained Ruddy Ducks, Redheads, Lesser Scaups, Canvasbacks, Western Grebes, Pied-Billed Grebes, Pintails, Mallards, and Baldpates. The raft extended from the shore to about a half mile distant into the lake. Western Grebes were on the far end of the raft, next to which were almost streight Ruddy Ducks. Scaups, Redheads, and Canvasbacks were next with a large number of Ruddies mixed in. Pintails, Mallards, and Baldpates were closer to the shore. Also along the shore line were about 6000 American Coots. While observing these birds on the lake 44 Snow Geese flew over and lit on a point of land extending out into the lake.

October 22--The raft of ducks observed on October 9 was joined with about an additional 1000 Canvasbacks. One hundred Snow Geese, about a third of which were young birds were also noted.

October 19--The large raft of ducks noted on October 9 and last observed on October 15, were not noted on this date, however about 300 Canvasbacks, Lesser Scaups, and Ruddy Ducks were seen on Pishkun.

October 26--A heavy concentration of waterfowl was again noted on Pishkun and Easements. On Pishkun proper one raft, estimated at about 15,000 birds were observed. Accurate identification could not be determined due to weather conditions. A cold north wind, bringing the first snow of the season was making the water very rough. In addition to the large raft of ducks on Pishkun, 23 Whistling Swan and approximately 300 Snow Geese were out towards the middle of the lake. Ducks consisting chiefly of Mallards, Redheads, Baldpates, and Pintails were also numerous on all of the small lakes throughout the easements.

In comparison with October 25, 1939, on October 26, 1940 there were about 10,000 more waterfowl birds using this refuge. Weather conditions on both dates were identical with exception that there was more snow on the ground in 1939 and the smaller lakes were coated with ice. The large increase in waterfowl on Pishkun this year over last year may be caused from the very low condition of the water at Willow Creek.

Rare Species Observed

On October 9, three Ring-Necked Ducks were observed on Pishkun. Two Hooded Mergansers were seen on October 2, and on October 19, fourteen of these birds were observed. These 14 birds have remained on the refuge up to the present date.

Although observations were not actually made by the Refuge Manager, reports from some hunters, hunting in the adjacent areas to Pishkun were that Black Ducks were passing through and stopping in this area. One hunter, known personally and who claims to have hunted Black Ducks extensively in Minnesota, says that he saw about 100 of these in the Pishkun area on October 27.

Waterfowl Diseases.

No outbreaks of diseases have been noted at either Pishkun or Willow Creek, however considerable time and assistance was extended in the Freezout Lake area on control

PISHKUN

Species	Date Aug. 10	Date Aug. 26	Date Sept. 11	Date Sept. 15	Date Sept. 25
Unidentified Ducks					
Mallards	2500	2000	1000	1000	1500
Pintails	500	500	600	400	700
Lesser Scaup				40	100
Baldpate	150	100	200	200	75
Gadwall	100		30	100	150
Canvas-back	40	45	75	50	75
Redhead	10	20	20	25	25
Buffle-head				8	30
Tuddy Duck	800	50	50	175	300
Green Winged Teal	300	500	200	300	300
Shoveller	150	200	100	100	200
American Merganser	300	300	40	150	150
American Coot	200	150	400	700	1500
Horned Grebe	1200	350	30	2	
Western Grebe	75	40	60	100	150
Holboell Grebe	100	75	75	20	40
Pied-billed Grebe	300	100	45	60	20
Common Loon	40	18	35	30	60
Avocet	30				
Killdeer	8	12	4	14	6
California Gulls	80	125	175	300	250
Northern Phalarope	26	40	35	28	
Curlew	130	145			
Great Blue Heron	16	18	10	8	12

6953

4798

3654

3810

5643

PISHKUN

Species	Date Oct.5	Date Oct.9	Date Oct.11	Date Oct.26
Canada Geese	9	23		
Snow Geese	23	44	100	300
Mallards	600	2500	450	
Pintails	200	1200	50 ✓	
Baldpates	250	1500	300	
Redheads	100	2000	400	
Canvas-backs	800	1000	100	
Shoveller	200	200	350	
Lesser Scaup	400	3000	125	
Gadwall	300	500		
Green Winged Teal	150	100		
Ruddy Duck	250	4500	75 ✓	
Buffle-head	8	30	23	
Hooded Merganser	2	2	14	
American Merganser	200	350	75	
American Coot	3000	6000	2000	2000
Common Loon	50	80	80	
Western Grebe	150	350	100	
Pied-billed Grebe	50	150	30	
Killdeer	6		9	
California Gulls	100	100	100	
Whistling Swan				23

Ducks
Unidenti-
fied
15,000

6848

23629

4391

17323

and cleanup of Botulism there. On September 1, an outbreak of this disease was reported to the State Fish And Game Commission who immediately notified the refuge manager at Pishkun. Approximately 1700 birds of waterfowl and shorebird species, also hawks and eagles were buried off the shore of the smaller Freezout Lake.

Representatives of the Fish And Game Commission, President of the local Sportsman's Club and the Refuge Manager contacted the Reclamation Service at Fairfield, and through cooperation of the Reclamation Service and funds furnished by the State Fish And Game Commission, a drain was put into this smaller lake, taking the water down considerably but not enough to drain the entire lake. This along with cooler weather conditions helped to check the disease considerably although a few birds continued to die throughout all of September and part of October.

B. Upland Birds

Hungarian Partridges are much more numerous on the Easements this quarter than in the past. Seven broods of these birds were definitely known to have hatched in the refuge and during the present quarter they were observed quite frequently. On September 25 about 100 Hungarian Partridges were observed.

C. Other Animals

A cow Elk has been observed on Pishkun throughout the entire quarter. This elk was first seen on August 11 when it approached within about 50 yards of the refuge headquarters buildings. At this time it swam across a narrow channel of the lake and spent about an hour on a small island. After feeding around on this island it again took to the water and swam across the main lake. Since August 11 this elk has been observed frequently at different locations of Pishkun and Easements.

On October 19, seven Antelope were noted on the lower side of the Sun River Canal in the Easements. Antelope are quite frequently seen above the canal on the bench lands extending into the easements but have never before been noted below the canal. These animals are becoming quite numerous in the area southwest of Choteau. About 75 head have been reported as observed this summer and fall.

111 REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Developments

Headquarters---During August work was continued and completed

Maintenance---All refuge sign posts at Pishkun were reset during this quarter. Fences around nesting areas were also kept in repair. Sod was cut away from the outside fireplaces at the fishermen's camp grounds and replaced with sand and gravel. A gate for official use only was put in the fence inclosing the camp grounds.

IV. PUBLIC RELATIONS

A. Recreational Uses

Continued use of the fishermen's camp grounds was enjoyed by many fishermen and picnickers throughout the month of August and a few fishermen also used this area during September and October. Weather conditions however were unfavorable for picnicking through most of September and October. Sixty three individuals registered at the camp grounds during this quarter.

Exceptionally good fishing was enjoyed by most fishermen throughout August and September. It was not possible to determine the number of fish taken as contacts with every fisherman cannot be made, however it is believed by the Refuge Manager, judging from contacts that were made from time to time that each fisherman has taken an average of 2 fish per fisherman day. About 1000 fisherman days were estimated for the entire quarter. Sundays and holidays were the most used days for fishing however Choteau business men and sportsmen came out regularly several evenings each week. Rainbow Trout, Silver Salmon, Grayling, and Native Trout are caught at Pishkun.

Hunting--Exceptionally good hunting of waterfowl was experienced by hunters during the first 4 or 5 days of season in areas adjacent to Pishkun. On October 1, approximately 50 hunters were contacted, all of which had exceptionally good luck. All species common to the area were noted as being killed. Mallards, Pintails, Gadwalls, and Baldpates were predominate in each bag but Canvasbacks, Redheads, and Ruddy Ducks were also well represented.

On October 6, approximately 150 hunters were observed in the area. Small bags were obtained however due to most of the ducks flying into the refuge and also because of the warm sunny condition of the day.

During the first days of the open shooting season boundary lines of the refuge were pointed out to many hunters. This was quite necessary due to the fact that boundary lines in most instances do not follow any fence lines.

on the Service Building and Office at Pishkun. Work was completed with WPA labor under supervision of the Refuge Manager and consisted of finishing of splitting, planing, and laying of the cedar shakes and staining of same with a red shingle stain, Construction and hanging of doors, completion of outside pointing of rubble work, construction of concrete guide for bottom of double doors, construction of a stone and dirt ramp for approach to doors, and finishing of interior of office. Work benches and tool racks were also constructed within the service building.

The following pictures are views of the completed headquarters buildings as of August 31, 1940.



North and west view of residence and west view of service building.



South view of residence and west view of service building.



West view of service building showing position of latrine.



Northeast view of service building and east view of house.

Qr. Re. Pishkun



Dirt and gravel fill and approach to doors.



Rear view of service building and storage of
WPA trucks.

O - Reports Quarterly, W.

IN REPLY REFER TO

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF BIOLOGICAL SURVEY
Choteau, Montana

November 4, 1940

Mr. Geo. E. Mushbach
Fish And Wildlife Service
Moiese, Montana

Dear Mr. Mushbach,

Inclosed please find quarterly narrative reports for Pishkun and Willow Creek.

When Mr. Kreager was here this summer he informed me that it was necessary to submit a separate report on each of these refuges. No report has been prepared for Benton Lake. All activities on Benton Lake consisted of Patrol and maintenance of the fence.

In preparing the report on Willow Creek I did not include any weather information as the data given in the Pishkun report would also cover Willow Creek.

Very truly yours,

Leon C. Snyder
Refuge Manager

QUARTERLY NARRATIVE REPORT

WILLOW CREEK
REFUGE

August 1, 1940 to October 30, 1940

Submitted By

Leon C. Snyder
Refuge Manager

1. WEATHER CONDITIONS

No weather observation equipment is on hand either at Willow Creek or Pishkun and all weather records are taken from daily records kept in the County Extension Office in Choteau. No weather records are included in this report for Willow Creek as it would only be a duplication of that included in the Pishkun report. Weather data for Willow Creek may be obtained by referring to the Pishkun report.

Water levels at Willow Creek are very much below the normal of past years, as this lake was drained during the summer for irrigation purposes and investigations of strata formations. Although a continuous stream containing approximately 4 or 5 second feet has been flowing into the reservoir, the water level has only raised 2 feet during the entire month of October. Although the reservoir has been raising gradually throughout the quarter it has not raised the level of the pond immediately above the dam to a sufficient height to again flood the wide upper stretches of the lake bed. Five ponds in the upper stretches of this lake bed that did not drain out are still existing but have lowered several feet since the draining of the reservoir.

11. WATERFOWL

Nesting of waterfowl was well under way before water levels started receding so rapidly and the usual number or possibly a greater number of waterfowl nested on the refuge than did a year ago. Identifications of the different species of ducks however could not be made accurately because of the distance to the few remaining ponds and of the eclipse plumage of the birds. After the rapid recession of the waters, shore lines were left very soft and muddy.

It was estimated that there were 2,500 ducks on the refuge during August. On August 9th., 30 broods of very small and newly hatched ducks were noted. White Pelicans remained on the refuge during the entire quarter, although during October the total number decreased frequently until only 2 were left at the end of the month. These however may have been migrants as they were observed with 10 Whistling Swan having arrived only recently. Curlews were numerous during August but were not observed during September. American Coots started migrating into the refuge about September 1st. A decrease was noted in all species of ducks during September and October. The Refuge Manager believes that the low water levels forced many of the ducks to move elsewhere for food as soon as the young were able to fly. Northern Phalarope

Northern Phalarope were noted on September 6 and 12th., but not thereafter. Marbled Godwits and Yellow Legs were noted during August and Avocets were noted up to September 6th. American Goldeneye and Whistling Swan were not noted until October 30.

No large flight or heavy concentration of waterfowl has been noted throughout the entire quarter. Observations of waterfowl were made on every visit to the refuge but at no time was there any greater number of birds than shown in the accompanying charts.

B. Upland Birds

Pintail Grouse were first noted returning to the refuge on October 20, when 12 were observed along the creek in the nesting area. These grouse do not summer on the refuge as a rule although a few individual birds were seen frequently during the quarter. These 12 Grouse were again noted on ~~XXXX~~ October 30, at one of the upland bird shelters. Examination of the shelter and of the self-feeder within the shelter showed frequent use. Feeders in 2 of the shelters were about half emptied during the period October 8 to 30. These feeders each hold about 2 bushels of grain.

Hungarian Partridges were observed in the nesting area throughout the entire quarter, although it was noted last year and again this quarter that the Huns are not observed as frequently in the nesting area after the Pintail Grouse return to the refuge each fall. Huns have been observed very frequently around the shelters, and at Pishkun they are known to feed regularly from the feeders. After the Pintail Grouse return to the refuge each fall they can, at almost any time, be found somewhere close to one of the shelters or even roosting on top of it, and after this time the Huns are very seldom ever noted around the shelters. From all indications it would seem that Hungarian Partridges and Pintail Grouse do not get along in the same immediate territory.

III. MAINTENANCE

All refuge sign posts were reset during the quarter and the fence around the nesting area was kept in repair.

IV. PUBLIC RELATIONS.

Contacts were made with Mr. Walker, Superintendent of The Reclamation Service at Fairfield relative to a development program for this refuge. Sites for the various types

of development work were discussed but as the Reclamation Service is contemplating on raising the water level and increasing the capacity of the reservoir considerably, it was thought that any development work should be given serious consideration relative to locations until the new water level is determined.

V. ECONOMIC USES

Economic uses on this refuge are also controlled by the Reclamation Service. Grazing has been permitted to a group of farmers at Fairfield. Horses are grazed continuously throughout the year and approximately 150 to 200 head of cattle are turned in about May 1 and grazed until about November 1st. to 15th. Like Pishkun this refuge has been heavily over-grazed.



White Pelican remained throughout the entire quarter at Willow Creek.

Waterfowl Population

Species	Date Aug. 1	Date Aug. 9	Date Sept 6	Date Sept 12	Date Sept. 22
Unidentified Ducks	2500	2000		1000	
Mallards			100	200	200
Pintail			50	150	100
Lesser Scaup					50
Baldpate			150	150	100
Gadwall					75
Canvas-back			20	20	65
Redhead			10	6	20
Buffle-head					16
Ruddy Duck			30	50	50
Green-Winged Teal					150
Blue-Winged Teal			100		
Shoveller			60		150
Cinnamon Teal			6		
American Merganser			40	30	50
American Coot		25	300	350	800
Horned Grebe	100	175	60 75	30 75	10 100
Western Grebe	10	48	22	22	22
Holboell Grebe	45	40	50	45	30
Common Loon		2	8	8	12
Avocet	17	13	35		
Great Blue Heron	15	26	6	8	10
Killdeer	24	18	10	16	8
Greater Yellow Legs	5	7			
California Gulls	500	400	150	150	150
Pied-billed Grege	30	25	45	40	40
Pelican	175	75	100	100	100
Spotted Sandpiper	3				
Northern Phalarope			40	18	
Curlew	50	70			
Marbled Godwit	5	2			

3477

2446

Species	Date Oct. 8	Date Oct. 20	Date Oct. 30
Canada Geese	1	75	60
Snow Geese	6	50	
Mallards	200	350	100
Pintail	100	100	150
Baldpate	150	50	150
Gadwall	100	75	50
Redhead	30		50
Buffle-head	3	10	3
Lesser Scaup	50		200
Shoveller	40	50	200
Green-Winged Teal		50	10
Canvas-back			75
Ruddy Duck		40	
American Goldeneye			6
American Merganser			50
White Pelican	46	4	2
Whistling Swan			10
American Coot	400	200	200
Killdeer			10
Western Grebe	25	12	10
Pied-billed Grebe	18	10	8
Common Loon	4		8
California Gulls	50	100	150

1225

1176

1520

NARRATIVE REPORT

PISHKUN

August 1940

I ASSIGNMENTS

During August 11 men were assigned to Pishkun, this including Mr. Ray Potter who was transferred from the Miller Lake project in July, and the 10 men assigned from Teton County.

A change in assignment was requested and received, for Orlo Stansberry from laborer to carpenter's helper, to fill the vacancy caused by the transfer of Baker Scott to the City project in Choteau.

Excellent cooperation was given by the Works Projects Administration in filling all requests for workers in keeping the quota full.

Fires in the surrounding mountains were very bad this month and men were called off of the project several times during the month. Out of a possible 1516 man hours which could have been worked including make-up time, 1432 hours were actually worked.

II SERVICE BUILDING & OFFICE

All work was completed on the service building this month. This included the laying of the cedar shakes and staining them with a red shingle stain which was on hand on the project. Other work completed on the service building this month consisted of finishing the laying of the upper floor, tying and bracing rafters, construction and hanging of the two 8 by 11 foot doors, pouring of a concrete guide for the bottom of these doors, painting of two coats of white outside paint on doors and around eaves of building, staining of inside of doors with red oil stain, and cementing on of a concrete band completely around the building at a level with the bottom of the windows.

The office in connection with the service building was also completed this month. This consisted of finishing the roof, putting on of a plywood ceiling, knotty pine walls, casing windows and doors, hanging of doors and painting and varnishing of all wood work.

1198 man hours was utilized in completion of the service building and office this month.

III LATRINE

The latrine at the headquarters site was completed this month. 32 man hours were worked in finishing the cementing on of a concrete band around the building and finishing the top of the latrine.

LV MISCELANEOUS

Seventy-two man hours were worked on the cleaning up around service building, hauling gravel for leveling purposes in front of the building, constructing tool racks, work benches, and racks for gasoline and oil, and moving equipment and tools into service building.

Trucks that were used on the project were kept well lubricated and the batteries in all trucks were checked for water. At the end of the working period all trucks were lined up in the rear of the service building.

V WEATHER CONDITIONS

Weather conditions during the month were very favorable for working, there being no time lost because of bad weather. Although the dry hot weather caused many forest fires in the surrounding mountains and men working on the project were repeatedly called on to fight fire, all but 4 men succeeded in getting in all of their allowable hours.

VI BREAKDOWN OF LABOR

	Man Hr.	Labor Funds
Service Building and office--	1198	\$503.50
Latrine-----	32 ³³³	13.44
Misc.-----	72	27.36
Supervision-----	130	78.00
Total-----	1432	622.30

THE INTERIOR
U. S. DEPARTMENT OF ~~AGRICULTURE~~ BUREAU OF BIOLOGICAL SURVEY

NARRATIVE REPORT FOR THE MONTH OF ~~August 1940~~

~~Pishkun~~ ~~Teton~~ ~~Montana~~
Project Name County State

- A. Average number of men employed during month 11
- B. Number and kind of owner-operated equipment None
- C. Number and kind of other equipment: 1. Rented None
2. Borrowed None
3. Government Owned 3 Chev 1 1/2 ton stakebody, 1 model B Ford Stakebody
2 Chev. dump trucks, 1 cement mixer and various other hand tools
- D. List of Supervisory Personnel assigned to Project (Names & Titles)
None
- E. Weather Conditions. (Rainfall-snowfall-working conditions) Weather hot and dry. .05 of an inch of moisture. Working
conditions good.
- F. Progress of the work and other details in accordance with the form on the reverse side hereof.

F. Progress of Work

Type of job or Project Designation	Unit	Work Completed This month	Work Previously Completed	Total Work Completed To Date	Percent Completed
Constructed	No.				
DAMS Earth moved	C.Y.				
Rubble Masonry	C. Y.				
Rip Rap	C. Y.				
Constructed	No.				
DIKES Earth Moved	C. Y.				
Rip Rap	C. Y.				
IS- Constructed	No.				
LANDS Earth Moved	C. Y.				
ROADS Constructed	Miles				
AND					
TRAILS					
TREES Planted	-No.				
Shrubs					
Other					
Food &					
Cover					
Plants					
FENCES Woven	Rods				
Barb	Rods				
Headquarters	No.				
Cabins	No.				
Garages & Office	No.	84%	76%	100%	100%
Others Latrine	No. 3	3%	97%	100%	100%
OTHER List					
WORK					
RODENT AND	Acres				
PREDATORY ANIMAL					
CONTROL	M-Days				

DATE Sept. 7, 1940

Leon C. Snyder
Leon C. Snyder
 Supervising Engineer

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1 GENERAL

A. Weather Conditions

1940	<u>SNOWFALL</u>	<u>PRECIP.</u>	<u>MAX. TEMP.</u>	<u>MIN. TEMP.</u>
Nov.	2.5	0.12	65	-14
Dec.	0.8	.07	61	-18
Jan. (1941)	<u>1.5</u>	<u>.04</u>	65	-14
Total	4.8	.23		
1939				
Nov.	T	0.09	67	17
Dec.	2.0	0.07	72	-11
Jan. (1940)	<u>1.8</u>	<u>0.06</u>	66	-23
Total	3.8	.22		
1936				
Nov.	1.0	0.09	71	-10
Dec.	1.5	0.11	55	-17
Jan. (1937)	<u>5.5</u>	<u>0.54</u>	35	-32
Total	8.0	0.74		

No equipment for recording of weather observations is located at Pishkun. All observations are taken from the Teton County Extension Office in Choteau. On December 15 there was about 5 inches of snow on the ground at Pishkun whereas in Choteau there was only about an inch.

Weather conditions throughout the entire quarter were unusually mild. Although the maximum temperatures of this quarter are lower than those of the same period for 1939, the average maximum and the mean temperatures were considerably higher.

Light snowfalls preceeded the drops in temperatures each month. The snow ~~kind~~ remained on the ground without drifting this year whereas other years it usually piles up. Cold spells lasted from a week to 10 days each after which the temperatures rose rapidly melting the small amount of snow in sometimes one day.

B. Water Conditions.

Guage Readings	Nov.	Dec.	Jan.
1940	4351.2	4351.2	4351.2 (1941)
1939		4342.0	4342.0 (1940)

Water levels at Pishkun do not fluctuate during the winter months. In 1939 the level of the reservoir was lowered as far as possible to permit work on raising of dikes and relining of the spillway.

All waters at Pishkun with exceptions of the large portion of the main lake were frozen over on November 14th. On November 22 this portion of the lake was also frozen over.

11 WILDLIFE

A. Waterbirds

1. Populations

- (a) One Canada Goose was observed on Pishkun on November 14.
- (b) The peak of migration of American Goldeneyes was reached during the first part of November. The number of birds observed this quarter were far below the observations of this same period last year. This may be due to an earlier freezeup of the main lakes.

Goldeneyes were first observed on November 2nd. and last seen on the refuge on November 19. On December 1, however, about 100 were noted on small spring lakes between Pishkun and Sun River Canyon. The largest number of these birds seen on the refuge this quarter was 200 on November 16.

(c) American Mergansers were observed on the refuge up to November 24. At this time 17 birds were noted resting on the ice.

(d) California Gulls were observed up to the general freezup of November 22. On November 19, about 70 birds still remained on the refuge.

2. Food and Cover.

Aquatic vegetation in many of the smaller lakes in the refuge appeared to have a much better stand than in 1939. Round stem Bulrush in several of the lakes extends much farther out from shore than it did during this period last year.

B. Upland Birds

1. Populations.

Approximately 95 Hungarian Partridges were noted at Pishkun during this quarter. This is about 60% more than were on the refuge last winter.

17 Pintail Grouse were noted on 4 different dates. On different occasions last year 1 or 2 grouse were noted. It is believed that these 17 birds were the hatch of the 1 or 2 previously noted.

From various observations of the upland birds at Pishkun it is noted that Pintail Grouse and Hungarian Partridges are very rarely ever seen feeding together. The Pintail seem to take their choice of the feeding places. This quarter the Hungarians are noted mostly at the northern end of the canal and the Pintails on the southern end. Last winter when there were no Pintails on the refuge the Hungarians rarely ever left these southern canal banks. The canal bank going through the refuge is well covered with weeds and sweet clover, furnishing a good food supply. A straw stack, stubble fields, and alfalfa fields in the easements also furnish a good supply of food. No supplementary feeding has yet been carried out at Pishkun this quarter.

C. Fur-bearing Animals & Predators

All of the smaller lakes in the refuge proper and also in the easements have a large number of Muskrats. In one small lake in the fenced in nesting area in the southwest corner of the refuge, 16 muskrat houses were counted and also a large number of bank runways were noted. Areas adjacent to the refuge are trapped heavily every winter and for the past three seasons about the same number of animals are taken. It is believed that these areas are kept supplied with muskrats from the areas within the refuge.

A coyote was observed on the refuge on only one occasion during the entire quarter. Weasel and skunk were also noted only occasionally.

III. REFUGE DEVELOPMENT & MAINTENANCE

A. Physical Developments.

No project has been started during this quarter and no WPA program was in operation. Plans were submitted for a development project to begin about March 1st.

B. Maintenance

Repairs were made to both nesting area fences in the refuge.

Most of the refuge hand tools were stamped with the USFWS hand stamp and all axes were sharpened.

On January 29 and 30 the exterior of the latrine at the headquarters site was given the first coat of a white paint. All woodwork in the front porch of the residence building including windows and doors was also repainted.

A furnace and coal heater, transferred from Medicine Lake were set up in the office and service building. This furnace being built for gas, had to be rebuilt so as to burn coal and wood.

Repairs were made to the Chevrolet stakebody $1\frac{1}{2}$ ton truck USDA 61-107 and made ready for transfer to the Deer Flats Refuge in Idaho.

IV. PUBLIC RELATIONS

A. Recreational Uses.

1. Recreational Areas

The parking area or fishermans camp ground was used several times by fishing parties enroute to and from the Split Rocks Lake area for the purpose of frying fish

and broiling of stakes.

On December 15, the Luther League of the Lutheran Church in Choteau held their Christmas party at Pishkun. 45 members and guests were present. Skating was the main form of entertainment.

2. Fishing

Very little fishing is done on the refuge during this quarter, however a few exceptionally good catches of Rainbow trout were made by fisherman from Choteau during the first week of November. Immediately adjacent to the refuge is a winter fishing lake where unusual catches of Yellow Perch can be had almost any time during the winter months when the ice is strong enough to hold up a man. Almost ~~every~~ every Sunday throughout the winter months from 25 to 100 fisherman pass through the refuge going to these lakes.

3. Hunting.

Local hunters obtained a few bags of American Goldeneyes during the first week of November in areas adjacent to the refuge. Other species of ducks had left these areas previous to November 1st. Exceptionally good bags of Mallards and a few American Goldeneye were had by all hunters in the Choteau and Fairfield areas. Reports from hunters were that northern Mallards were in exceptionally good shape.

4. Visitors

Visitors to the refuge were Mr. Geo. E. Mushbach, Superentendant of Refuges, Mr. J. Clark Salyer Jr., Chief, Division of Wildlife Refuges, Paul T. Kreager, Refuge

Inspector, Wm. Gaffney, District Ranger, and R. T. Fergusson, Forest Supervisor, Lewis And Clark National Forests. Approximately 50 other visitors of the general public visited the refuge.

5. Cooperation in Federal Duck Survey

Three days in January were given over to the annual waterfowl estimate carried out all over the Nation. With the assistance of Bruce Neal, Local State Game Warden, all the territory in Mr. Neal's patrol district was covered. Approximately 10,000 Mallards were estimated to be wintering in this area.

6. Other

The Service picture "Beavers At Home" Was showed to group of about 25 Boy Scouts in Choteau on January 27. On January 28 this same picture was shown to the Choteau Lions Club.

B. Violations

1. State Assistance

Assistance was extended the state game department in obtaining evidence for the arrest of Hilary Golahon for the shooting of a doe deer in the Teton River Canyon. Golahon plead guilty and fine was affixed by the local Justice Court.

2. Refuge Violations

On January 29, Al Doney of Great Falls, Montana was caught trespassing and trapping Muskrats in one of the nesting areas at Pishkun. No immediate arrest was made although necessary evidence was obtained. Report of the violation and affidavits

were submitted to Mr. Mushbach for relaying to the U. S. Game Management Agent and the Regional Office.

V. ECONOMIC USES

Economic uses at Pishkun are under supervision of the Reclamation Service.

VI. OTHER ITEMS

A. Photographs



No. 1 Part of the group of the Luther League Christmas party held at Pishkun on December 15. Note the depth of snow and compare with pictures taken on December 24.



No. 4 December 24, 1940. Looking west along north boundry of refuge field. Note the difference in grass and cover conditions. The field on the right hand side of the fence is privately owned.



No. 5 December 24, 1940. Looking north along east boundry of refuge field. Here also a strong contrast is noted in grass conditions.



No. 6 Jan. 10, 1941 Looking northeast across portion of nesting area in southwest corner of refuge. Note condition of nesting cover where grazing has been controlled for 3 seasons. Refuge headquarters can be seen in the distance.



No. 7 Jan. 10, 1941 Another portion of the same nesting area shown above. Note how closely grass is grazed off on refuge lands immediately outside nesting area fence.



No. 8 Jan. 10, 1941 A portion of the nesting area on the north side of Pishkun. Fence gates in this area have always been thrown open after July 15 by parties leasing the Pishkun field from the Reclamation service. Trees planted in 1938 and aquatic vegetation in the lake in this area are damaged considerably by stock. Note the difference in cover conditions as compared with the preceding pictures.

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1. GENERAL

A. Weather Conditions

<u>1940</u>	<u>SNOWFALL</u>	<u>PRECIP.</u>	<u>MAX. TEMP.</u>	<u>MIN. TEMP.</u>
Nov.	2.5	0.12	65	-14
Dec.	0.8	.07	61	-18
Jan. (1941)	<u>1.5</u>	<u>.04</u>	65	-14
Total	4.8	.23		
<u>1939</u>				
Nov.	T	0.09	67	17
Dec.	2.0	0.07	72	-11
Jan. (1940)	<u>1.8</u>	<u>0.06</u>	66	-23
Total	3.8	.22		
<u>1936</u>				
Nov.	1.0	0.09	71	-10
Dec.	1.5	0.11	55	-17
Jan. (1937)	<u>5.5</u>	<u>0.54</u>	35	-32
Total	8.0	0.74		

Willow Creek Refuge has no equipment for recording of weather observations. All observations are taken from the records kept in the Teton County Extension Office in Choteau. Willow Creek refuge is about as close to the mountains as is Fishkum and although there is approximately 250 feet difference in the water level elevations, (Willow Creek being the lower), the depth of snow on the ground is usually about the same. On December 15 there was also about 5 inches of snow on the ground at Willow Creek.

Weather conditions throughout the entire quarter were unusually mild. Although the maximum temperatures of this

quarter are lower than those of the same period for 1939, the average maximum and the mean temperatures were considerably higher.

Light snow falls preceeded the drops in temperatures each month. The snow remained on the ground without drifting this year which is very unusual. Cold spells lasted from a week to 10 days each, after which the temperatures rose rapidly melting the small amount of snow in sometimes one day.

B. Water Conditions.

Gauge Readings	November	December	January
1940	4093.6	4095.0	4098.0 (1941)
1939	4123.8	4123.8	4123.5 (1940)

The above gauge readings were taken at the close of each of November, December and January. During the winter of 1939 and 1940, Willow Creek reservoir was up to within 8 or 9 feet of its capacity holding. During the summer of 1940 this lake was drained for irrigation purposes and for locating leaks in the Dam. A continuous flow of water from "Willow Creek" feeds this lake and although the outlet gates have been closed since about September 1, 1940, the stream does not carry a sufficient amount of water to cause a rapid raise of the water level. Since the close of the gates this reservoir has only come up 23 feet on the gauge. This is not a sufficient raise to cause the water to again cover the upper areas of the reservoir basin.

In 1939 and 1940 Willow Creek reservoir did not freeze

over until December 22. This was probably due to the volume of water in the reservoir as well as wind and mild weather conditions during November and the first half of December. During November of 1940 this reservoir froze completely over.

11. WILDLIFE

A. Waterbirds

1 Populations

On November 15th. approximately 800 Mallards were observed on the refuge. Previous to the sub-zero weather of the second week in November, Mallards were using the entire water areas of the refuge. On the 15th. these birds were all concentrated on a very small portion of open water. At the time of observation the open portion was not sufficient to allow all the ducks in the water at the same time. A few Mallards remain at Willow Creek throughout the winter months. The creek flowing into the refuge at times freezes over completely for short periods, but several large springs in the creek a half mile west of the refuge remain open in the severest of weather. Ducks remaining on the refuge all winter use these springs continuously during periods of severe weather. About 100 Mallards are wintering on Willow Creek both on and off the refuge.

On December 10, two Canada Geese were observed in the open waters of the Willow Creek stream. These two geese were in the creek only about 20 yards distant from one of the upland bird shelters. During December of 1939 approximately 600 Canada Geese remained at Willow Creek until the general freeze-up of December 22.

Migration populations and other early winter waterfowl residents were very few on the refuge this quarter as compared with this period last year, although populations at Pishkun and other areas in this locality were greater than last year. It is believed that the extremely low waterlevels plus the early freeze-up is the cause of the subnormal waterfowl populations this quarter.

2. Food And Cover

Food and cover conditions for both waterfowl and upland birds is excellent in the fenced in nesting area. The creek flowing through this area has exceptionally good beds of Sago Pond Weed, *Ruppia*, and Redhead Grass. Roundstem and Prairie Bulrush in the marsh areas of this nesting area also done exceptionally well during the past growing season.

B. Upland Birds

Pintail Grouse have become more numerous in the refuge each winter for the past 3 years. These birds are rarely noticed during the summer months but have always been noted when the first cold spell arrives. 32 Pintails were noted on November 15th., 44 on December 10, and 48 on December 13. These dates were all during periods when the ground was covered with snow and temperatures around zero or below. On these observations the grouse were around the upland bird shelters. Other observations during periods of good weather grouse were noted in smaller flocks scattered out in the tall grass of the nesting area.

Only on one occasion were Hungarian Partridges ob-

served in the refuge this quarter. A flock of 13 birds were noted. Several flocks were noted however farther up the creek outside the refuge.

C. Fur-bearing Animals And Preditors

Like Pishkun, Willow Creek has an increased number of muskrats this winter. 24 houses were counted in the marsh area of the nesting area and muskrats have been noted in the creek flowing through this area.

One weasel was taken on December 28 at one of the upland bird shelters. A box, 3 feet long, 6 inches high and 6 inches wide, with no bottom and partly open on one end, with a small steel trap set inside, is used at the sites of two of the upland bird shelters for protection of grouse from weasel. Permission from the Washington Office has been granted for controlling weasel and skunk in these areas.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Phisical Development

No developpment program has been in operation during this quarter, however, plans were completed and submitted to Mr. Mushbach for a WPA development program for this spring.

B. Maintenance

Maintenance consisted of minor repairs to nesting area fences and refuge sign posts.

IV. PUBLIC RELATIONS

A. Recreational Uses

1 Recreational Areas,

No recreational areas have been set aside on this refuge.

2 Fishing

Although fishing is permitted during the state open season, very little fishing is done. At one time Willow Creek Reservoir had a good stock of Rainbow Trout but no restocking has been done the past few years and a large number of fish escaped when the reservoir was drained last summer.

B. Violations

1 Refuge Violations

One day, January 17, was given to Federal Court attendance at Helena, Montana for the trial of Geo. D. Goss, arrested at Willow Creek during December of 1939 for trespassing and trapping of muskrats in the fenced in nesting area on this refuge. At the trial Mr. Goss's plea of guilty at the time of arrest was changed to not guilty. After the testimony of the arresting officer, the attorney for the defendant recommended that the defendant again change his plea from not guilty to guilty. A fin of \$10.00 was affixed by the Court.

Regular patrol trips and frequent investigations of muskrat areas were made during the quarter to see if trappers were again poaching on the refuge.

C. Other

Other public relations were covered in the Pishkun Narrative Report.

V. ECONOMIC USES.

Economic uses at Willow Creek are also controlled by the Reclamation Service.